

634
R-4
Indexed ✓

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

FOREST INSECT INVESTIGATIONS

ANNUAL INSECT CONTROL REPORT

1937

REGION 4

3
Insect Control, R-4
(Annual Report)

November 23, 1937.

Chief, Forest Service,
Washington, D. C.

Dear Sir:

Generally speaking and exclusive of the forests included in the "Yellowstone Project", conditions regarding the two classes of large epidemics (D. ponderosae and D. monticolae) are reversed as compared with conditions the past several years. During the past several years our major concern was control of the D. monticolae epidemic on forests isolated from the Yellowstone group, namely the Minidoka, Ashley, Uinta, and Wasatch. Our annual report for 1936 showed some 2,675 trees still to be treated on these forests. These forests report 3,354 trees treated in the fall of 1936 and spring of 1937 and surveys this fall show the infestations on these forests in endemic stage. The Minidoka reports an estimate of but five new attacks on the forest. We feel, therefore, that for the present we have this infestation well cleaned up.

As regards the epidemic caused by D. ponderosae we are not so optimistic. Generally speaking, on the ponderosa pine forests of Utah and Nevada this infestation is rapidly building up. The rate of increase varies from two to one on the Ashley to five or six to one on the Powell. Nowhere is the infestation out of control as yet but indications are that it is building up rapidly and that vigorous action must be continued if it is to be kept under control.

On the Ashley the survey reports that the attacks have doubled but are still too scattered to warrant treating. We reported last fall 400 to treat on the Dixie. 1,830 were treated since then and the survey shows 675 to treat this fall. We estimated last fall 1,300 to treat on the Powell. 2,550 were treated and the estimate shows 3,270 to treat this fall, winter and next spring. 808 were treated on the Nevada and estimate

Copy for information Dr. Beal

Chief, F. S.

shows 392 still to treat. The increased number of trees treated over that shown by the 1936 survey on the Dixie and Powell is due to the fact that additional areas on these two forests were surveyed and treated after the submission of our 1936 report.

Dr. Deal of the Bureau of Entomology and Mr. Farmer in charge of insect surveys for the Forest Service both report this infestation rapidly building up in the ponderosa pine type in Utah and Nevada. The new attacks reported this fall are rapidly being treated with GOC and ERA labor and will be cleaned up early next season. However, in order that the epidemic may not get out of control a good deal of scouting in new territory will need to be done and surveys extended also. This is especially the case on the Powell.

Infestations caused by other insects are secondary in extent or amount of damage caused.

Attacks of the western pine beetle (*P. brevicornis*) are largely endemic. In spite of this it has been felt that the losses in ponderosa pine on the central Idaho forests over a long period of time have been heavy and that on that basis perhaps treatment would be justified. For that reason a survey is being conducted by the Bureau of Entomology and Plant Quarantine on the Weiser Forest in the ponderosa pine type to determine the situation. As you know, this survey is being financed largely by the Forest Service. No report has as yet been received regarding the findings of this survey.

The Douglas fir beetle (*D. pseudotsugae*) continues to increase throughout the region. It is reported on the Weiser, Uinta, Oache, Powell, and Dixie and we know of its presence in epidemic proportions on most all remaining forests of the region. In some places this timber is of minor importance though on some of the forests of Region 4 it is the most valuable species and brings a higher price than does ponderosa pine in Idaho. A limited amount of control work has been done by sale of infested material, though on the Powell in collaboration with the Park Service some 579 trees were treated on areas adjoining Bryce Canyon.

The alpine fir beetle (*Dryocoetes confusus*) is common in the alpine fir stands throughout the region. Timber of this species is of minor value and the greatest damage is in increased fire hazards. No control work is being done on account of low values.

The fir engraver beetle (*Scolytus ventralis*) attacks are similar to those of the Douglas fir beetle. It continues to spread in epidemic stages throughout the white fir stands of the region. The Nevada reports 60% of the white fir stands depleted with no evidence of decline. On account of low values no control is justifiable.

Chief, P. S.

Attacks of the Engelmann spruce beetle (D. engelmanni) have reached epidemic proportions in various places. The Challis reports an infestation on Little Lost River, the Powell reports 300 trees on the East Fork, the Dixie treated 35 trees in connection with timber sales. Mr. Farmer reports no epidemics on the Ashley, Wasatch and Uinta.

Work of the Flathead borer (Agilus politus) in maple in some of the heavily used recreation areas near Salt Lake City is no longer causing any concern and is on the decrease.

The following summaries by forests give more detailed descriptions of work done since the last annual report, and present conditions.

Ashley National Forest.

D. monticolae:

Three hundred and sixty three (363) trees on the Bear Wallow unit and 850 trees on the Henry's Lake unit were treated with ERA labor largely in the fall of 1936.

Mr. Farmer in his survey report of September 27 states "Lodgepole pine infestations are after fall control reduced to a safe degree. A prop camp in the Bear Wallow area can remove the 50 to 100 newly infested trees so that no further control will be necessary. Treating in the Henry's Fork area was highly successful."

"Survey results on the three forests (Ashley, Wasatch, and Uinta) indicate that the 'backbone' of all infestations is broken and that beetles in lodgepole pine are generally endemic. No control work is recommended."

D. ponderosae:

Thirteen trees on Lake Fork Mountain and 45 trees at Green Lakes camp were treated with ERA labor. These trees were scattered over a large territory. While the cost per tree was high the work is believed worth while. Mr. Farmer reports: "Though no control is recommended for the coming fall or spring seasons because of the wide scattering of these infestations there is a tendency toward increase that must be watched on all the Ashley's ponderosa pine forest. This tendency is general in the ponderosa pine forests of Utah."

"Attacks in the ponderosa pine in the Moon Lake area have doubled but are still too few and scattered to be worth while treating."

"Other attacks over this large plateau ponderosa pine area are still too scattered for economical treating this year."

Chief, F. S.

D. engelmanni:

Farmer reports that careful search of spruce areas on the Ashley, Wasatch, and Uinta failed to reveal any infestation.

Cache National Forest.

D. monticolae:

It was noted this summer that there seemed to be a heavy build-up in infestation in limber pine along the Bear Lake, Bear River divide on the main division of this forest. A survey was made this fall which reported a number of groups with increases averaging four to one. It was estimated there were 422 limber pine and 116 lodgepole pine trees in these groups. Treatment was undertaken and is now under way and it is reported (October 27) that some 500 limber pine trees have been treated with three crews still in the field. This work is being done largely with P. & A. funds, the more inaccessible areas being treated first, the plan being to treat the more accessible areas with CCC or WRA crews next spring.

D. pseudotsugae:

A number of groups of infested trees have been reported located largely on the northern end of the main division of the forest. These range from 10 to 120 trees to the group. The largest group is being treated through timber sale practices making proper disposal of infested material. This is the only treatment recommended by the Bureau of Entomology, and will be followed on this forest.

Alpine fir beetle (Dryocetes confusus):

This epidemic is continuing, causing considerable increase in fire hazard. No control is being done.

Aspen borer is found generally. On account of low values no control is being done.

Challis-Lemhi National Forest.

D. monticolae:

This epidemic has run its course on the Challis, taking from 70% to 95% of the mature and overmature trees. No new attacks were noted.

On the Lemhi 50% to 60% of mature timber has been killed and fresh attacks are still noted. No control is being undertaken.

Chief, F. S.

D. pseudotsugae:

Spotted areas of infestation occur. No build-up is noted, and on most areas a decrease is reported.

D. engelmanni:

A heavy infestation on Little Lost River is reported. A survey is now being made and control will be undertaken next spring if found advisable.

Spruce budworm (Cossocia fumiferana):

Reported prevalent in spruce stands but doing little damage.

Dixie National Forest.

D. ponderosae:

An epidemic on the Panguitch Lake unit of the Sevier Division was discovered in 1935. 701 trees were treated that year on this unit. Surveys in the fall of 1935 and 1936 showed other infestations were building up and in 1936, 855 trees were treated on the Panguitch Lake, Pass Creek, Lower Mammoth and Upper Mammoth units. In the spring of 1937, 1,275 trees were treated on these units plus the Strawberry-Swains Creek unit.

In view of the increases throughout the ponderosa pine type a 2-1/2 percent survey was made in the fall of 1937 covering all the ponderosa pine type on this division of the forest. This survey was conducted by the Bureau of Entomology and showed 675 trees which should be treated.

These trees are being treated with ERA labor and clean-up will be accomplished next spring.

The figures indicate that the epidemic has been vigorously combated and is therefore now well under control.

D. engelmanni:

Survey shows some 35 infested trees along creek bottoms in various localities most of which have been disposed of by sales. Other control is not yet recommended but in as much as the epidemic is not subsiding close attention will be paid to infestations.

Mimidoka National Forest.

D. monticolae:

It was estimated in our 1936 report that there were some 1,000 trees to treat on the Cassia, Albion, and Sublett divisions of this forest.

Chief, F. S.

In the fall of 1936 and spring of 1937, 1,628 trees were treated. Surveys conducted this fall report the following: "Estimated new attacks, 1937 - 5."

It would appear, therefore, that this epidemic is ended. Records show that since 1931, 24,896 trees have been treated on these divisions of the forest.

Nevada National Forest.

D. ponderosae:

The epidemic on the Moapa division is still continuing. In 1936 16 trees were treated; in 1937, 208. A 5% survey was made in the fall of 1937 and indicates a total of 39% trees to treat. These trees will be treated with CCC labor.

Previous reports have indicated the beetles responsible for the damage as *D. ponderosae* and *D. barberi*. The forest now states they believe it to be *D. brevicornis* working in ponderosa and limber pine. This point is now being investigated.

Fir engraver beetle (*Scolytus ventralis*):

Attacks are found generally throughout the white fir stands in epidemic stages and have caused a mortality of about 60% of the timber. No control work is being done.

Powell National Forest.

D. ponderosae:

Records show 571 trees treated on this forest in the spring of 1936 and 2,559 in the fall of 1936 and spring of 1937.

In the fall of 1937 a survey was conducted on the East Fork of Sevier River and the area surrounding Pine Lake. Areas on the Escalante side were scouted. This showed 3,270 new attacks on the East Fork and Pine Lake areas.

The survey report states: "Infestations continue to be aggressive and newly attacked trees are in slightly more than a five to one ratio." Figures indicate a serious infestation and vigorous measures are being taken for control.

Control is being done largely with ERA labor and it is hoped to have all known infestations treated at the end of next spring.

Chief, F. S.

It also is planned to extend surveys to other unsurveyed territory within this type, this fall and winter if the Bureau of Entomology concurs and weather permits, otherwise next spring.

This project is being operated in conjunction with a similar project in Bryce Canyon National Park under the direction of the Park Service. Surveys made in 1936 showed the presence of the epidemic both in Douglas fir and ponderosa pine on an area embracing portions of both the Park and the Powell Forest. Accordingly, a joint project was set up and control effected simultaneously on forest and park.

Exact figures are not available as to the extent of the infestation in the Park but Mr. Daleon, Park entomologist in his report of January 25, 1937, shows 390 ponderosa pine infested with *D. ponderosae* and 1,127 Douglas fir infested with *D. pseudotsugae* to treat with three sections not yet surveyed. Dr. Deal states (November 17, 1937) there still remain 400 ponderosa pine and 400 Douglas fir to treat. This work undoubtedly will be completed when the CCC camp returns early next spring.

Areas on the Powell Forest which were originally included in this project were well cleaned up (8,559 ponderosa pine treated and 879 Douglas fir) and 1937 fall survey shows but 130 new attacks in ponderosa pine and 100 Douglas fir. These trees will be treated this winter or early next spring.

It will be necessary, of course, to include in the project all ponderosa pine and Douglas fir type which is infested on areas surrounding the Park if the infestation within the Park is to be completely controlled. Treatment of but a strip around the Park it is believed will not give complete success as it is reinfested year after year from the outside infested area. In order to clean up the infestation of Black Hills beetle on forest areas and also to aid in control of the Park infestation, the survey and control areas are being rapidly extended to include all areas supporting ponderosa pine. As now planned all known infestations in ponderosa pine will have been treated by early spring of 1938, and the 100 Douglas fir trees in the strip adjoining the Park will also be treated.

D. engelmanni:

There is an aggressive appearing epidemic of spruce beetle in the few trees in the Crawford Creek and upper East Fork bottoms. It is expected these comparatively few trees will be destroyed but values are so low and danger of infestation to other spruce areas so remote that no control will be instituted.

Chief, F. S.

Uinta National Forest.

D. monticolae:

As previously stated attacks from this source are in the endemic stage. On Tabby Mountain some 20 infested trees were reported which were treated in logging.

D. pseudotsugae:

The Douglas fir beetle is prevalent in epidemic stage. Special control is not feasible but all possible material is removed in logging.

Weiser National Forest.

A survey is being made in cooperation with the Bureau of Entomology to determine the losses due to *D. brevicornis* in ponderosa pine. Attacks are, generally speaking, not in the epidemic stage but the endemic attacks are so widespread and have continued for so long a period of time that it is felt the cumulative losses are great. Data are being gathered to show what the situation really is. Reports from the survey have not yet been received at this office.

Wyoming National Forest.

The Snake River drainages of this forest (Greys River and Star Valley) are included in the abandoned "Yellowstone Project" where no control work has been done for several years. On the Green River drainage, however, surveys are made each fall and control measures undertaken to protect valuable stands of tie timber and areas of high recreational and watershed values.

It is recognized that unless there is soon a natural subsidence of the widespread epidemic surrounding this drainage, on the Washakie, Teton, Targhee, and Greys River drainages of the Wyoming, that control on this drainage will be a losing venture. However, it is felt to be economically justified for the present at least, to hold in check to the greatest degree possible, the infestation in such stands as LaBarge Creek, Dry Beaver, etc., where tie cutting is in progress; also stands of high recreational and watershed value such as Middle Piney Creek and the Silver-Scab Creek area on the Wind River drainage.

D. monticolae:

In the fall of 1936 and spring of 1937, 1,836 trees were treated on the Green River drainage, 1,486 of which were on LaBarge Creek. This was a clean-up of all known epidemic infestations in the lodgepole pine type.

The survey report of 1937 shows the following "hot spots" in lodgepole pine type:

Chief, F. S.

1. LaBarge Creek - 809 new attacks.
2. South Piney (Witherspoon Creek) - 144.
3. Middle Piney Creek - 257.
4. South Horse Creek - 724.
5. Silver Creek - 1,000.

With the exception of South Horse Creek these areas have all been treated in the past and the figures represent largely reinfestations from surrounding infested areas of limber pine where no control work is done. On South Horse Creek no infestation had been noted in the past. The infested area is adjacent to the tie cutting area in which all the merchantable lodgepole tie timber has been removed.

It is recommended that no control be instituted on South Horse Creek at present as the area contains no marketable lodgepole timber and has very little recreational value.

LaBarge will be cleaned up again before next summer. The timber operator will be required to treat up to 200 trees as provided in the contract, as infested trees are encountered where cutting is in progress. The balance will be treated with CCC and XRA labor largely.

Silver Creek will be treated with CCC labor largely. Recreational and watershed values are high on the Wind River division and the project is economically desirable.

Sawtooth National Forest.

Douglas fir tussock moth (*Homocampa pseudotsugae*):

There are no new developments to report except the introduction on the infested area by the Bureau of Entomology of a number of one of the parasites of this moth. This was done last summer on an experimental basis. It is hoped that the numbers of these parasites will increase greatly and that control can be effected in that manner.

CONCLUSIONS

In view of the above described conditions we therefore propose the following:

Chief, F. S.

1. D. monticolae. Treatment on the Wyoming as outlined. Elsewhere no control needed or is not economically sound.
2. D. ponderosa. Treatment on Dixie, Powell, and Nevada as outlined. Extend survey on the Powell.
3. D. engelmanni. Treatment on the Dixie for future epidemics. Treatment elsewhere by logging except on Lemhi perhaps. Special measures may be necessary there depending upon the findings of the survey.
4. D. brevicornis. No treatment except perhaps on the Weiser. Depends upon survey report.
5. D. pseudotsugae. Treatment by sales practices where possible.
6. Others. No treatment.

We will advise you of the results of the Weiser survey at a later date and we will forward Forms T.M.-I.C.-1 not later than February 1, 1933 providing this delay will not inconvenience your office. Last year we were advised that it would be satisfactory to forward the I.C.-1 forms after cessation of the fall insect control work.

Very truly yours,

R. H. Rutledge

Regional Forester.

